EYE CARE THROUGH PRIMARY HEALTH CENTRES

DANPCB

TRAINING MODULE FOR MEDICAL OFFICERS

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PART - I

WHAT YOU SHOULD KNOW ABOUT

THE NATIONAL PROGRAMME FOR THE CONTROL OF BLINDNESS

LEARNING OBJECTIVES

Part one of this module has been designed to strengthen and enhance your knowledge regarding National Programme for the Control of Blindness, in respect of areas pertaining to, national health policy on control of blindness, its development, epidemiology and magnitude of blindness problem in India, programme objectives, goals, targets, programme components, constraints and strategies. This will further help you to participate effectively in the control of blindness in the country.

NATIONAL HEALTH POLICY ON CONTROL OF BLINDNESS

Health policy as pronounced by The Central Council of Health in the year 1975, states:

One of the basic human rights is the right to see. We have to ensure that no citizen goes blind needlessly, or being blind does not remain so, if, by reasonable deployment of skill and resources, his sight can be prevented from deteriorating, or if already lost, can be restored.

This policy statement is a definite evidence of political commitment at the national level for the cause of blindness control.

MILESTONES IN THE DEVELOPMENT OF NPCB

First organised effort for control blindness in India started with the launching of National Trachoma Control Programme in the year 1963. The magnitude and causes of blindness problem in the country, were realised, after a survey by the Indian Council of Medical Research in 1971 - 1974.

This resulted in adoption of blindness control strategy as follows:

- *Dissemination of information about eye care with particular emphasis on eye health among children and other vulnerable groups.*
- *Ensure accessible and affordable ophthalmic services to the community in the shortest possible time through eye camp approach.*
- *Establishment of a permanent infrastructure of a community oriented eye health care.*

With this strategy as the basis, the National Trachoma Control Programme, was changed into National Programme for the Control of Blindness (NPCB), in the year 1976. The objective of NPCB, was to reduce the prevalence of blindness from 14.9 per thousand to 3 per thousand by the year 2000.

The programme got a further boost after its inclusion in the 20 point socio-economic programme of the Prime Minister in 1982.

MAGNITUDE AND CAUSES OF BLINDNESS IN INDIA

MAGNITUDE

There are an estimated 35 million blind persons (Visual Acuity < 3/60), in the world. Out of this 6 million blind are in India i.e one, in every six blind persons in the world, is in India. A national sample survey by ICMR during 1974, indicated, prevalence rate for economically blind as 1.38 percent, in the country.

Another survey in 1989, conducted jointly by NPCB and WHO revealed that blindness prevalence rate has increased to 1.49 percent. As per this survey the country has 12.57 million economically blind persons (i.e persons with Visual Acuity < 6/60).

The main causes of blindness and their proportion to total blindness, in the country are detailed below.

Causes of blindness	**Percentage**
Cataract	*80.10*
Refractive errors	*7.35*
Central corneal opacities	*3.40*
Glaucoma	*1.70*
Others	*7.45*

Out of 12.57 million estimated blind persons in India, the largest number i.e 10.07 million (80.1 percent), is due to cataract. Therefore tackling the problem of cataract will result in tackling blindness in a big way. Correcting refractive errors would enable us to prevent the second biggest cause of blindness.

Analysis of causes of blindness, distinctly brings out, that more than 87 percent of blindness in the country, can be effectively tackled by two major interventions. Most important being cataract surgery and the next important being the correction of refractive errors.

COMMON EYE DISEASES CAUSING BLINDNESS

Let us update and refresh our knowledge regarding commonest eye diseases, leading to blindness. This will help you to understand the problem of blindness in details and will enable you to organise eye care services for your PHC population, in an effective manner.

Cataract

Cataract is generally defined as any opacity of the crystalline lens of the eye. These lens opacities reduce the light rays falling on the retina and thereby block the vision. It is most commonly seen in elderly persons, and therefore also called 'senile' cataract. The older the person, the higher the risk of developing senile cataract. The causes of senile cataract are unknown. There are indications that this cataract develops more after severe dehydration, more in persons exposed to bright sunlight, more in people who smoke, more in patients with diabetes. Cataract may also develop after injury to the eyeball or lens. A different form of cataract can develop at a very young age, the congenital cataract.

Cataract can only be cured by surgical removal of the clouded lens. Removal of the lens causes a Refractive Error, which can be corrected by spectacles, contact lenses or a small plastic lens implanted in the eye, an Intra-Ocular Lens (IOL).

Why has cataract blindness increased so much?

- *First of all, demographic changes have been dramatic over this period. The number of persons above 40 years of age in India has increased from 115 million in 1971 to 187 million in 1991. In absolute figures, this is an increase of 63% of the population at risk.*

- *Life expectancy at birth has also increased from 46 years in 1971 to 59 years in 1990. The risk to develop cataract blindness in India rises sharply above the age of 45 years. The increase of the number of persons at risk is the main reason of the increase in cataract blindness.*

- *The number of operations performed annually in India has been increasing steadily between 1981 and 1986 from 0.5 million to 1.2 million. Thereafter it reached a plateau and only after 1990 there has been a further increase to nearly 2 million operations in 1993.*

However, 2 million operations per year is not even enough to take care of the new cases of cataract blindness, which are added every year (=incidence). This incidence of new cases of cataract blindness is estimated at around 2 million persons per year. Despite the increase in cataract surgery over the last 15 years, the prevalence of cataract blindness is still increasing.

One should also realise that cataract operation done is not equal to sight restored. Not all cataract operations convert a blind person into a sighted person. The success rate of cataract surgery in India ranges from 85-95%. Patients blind in only one eye, therefore by definition not blind persons, are operated, second eyes are operated and also patients with a visual acuity better than 6/60 are operated and provided with Intra-Ocular lenses (IOLs). It is estimated that at least 5 million cataract operations per year will be required to control cataract blindness in India.

Refractive Errors

In the normal eye, the lens focusses light to form a sharp image on the retina, the sensory tissue of the eye. When somebody has a Refractive Error, the lens is either under or over refracting the light rays and no sharp image is projected on the retina. This can be corrected by putting spectacles in front of the eye or contact lenses on the cornea.

Refractive Errors are most common in children between 8-15 years, middle age persons and elderly persons who have their lens removed because of cataract (aphakia). Patients can be treated by measuring the power of the correction needed (refraction) and provision of glasses.

Glaucoma

In glaucoma, the pressure inside the eyeball is too high. This causes permanent damage to the optic nerve and sensory tissue of the retina. It can present in different clinical forms. Some cause acute pain in the eye, others are without any symptoms and gradually reduce the vision. Patients should be identified at an early stage, so that adequate treatment can prevent any further damage. Treatment is medical or surgical.

Vitamin A Deficiency (Xerophthalmia)

Adequate intake of Vitamin A is essential for the proper development of the retina, as well as the superficial cell structures of the cornea, the skin, the lungs and the intestines. The earliest effects of Vitamin A deficiency involve the eye. It results in night blindness, dryness of the conjunctiva and cornea and ultimately in corneal ulceration, perforation and blindness.

It may also result in respiratory tract infections and diarrhoea. It is often related to protein-calory malnutrition, diarrhoea, worm infestations and other intestinal disorders. Blinding malnutrition mostly affects children between 6 months and 6 years of age.

Prevention is the most important intervention. Primarily, there should be an adequate intake of Vitamin A in the diet (breast milk, dark green leafy vegetables, mango, papaya, dairy products, fish, etc.). Where such dietary intake is not available, like in drought stricken areas, poverty, etc., 6 monthly administration of massive doses of Vitamin A to children from 6 months to 6 years can be a short term intervention.

Trachoma

Trachoma is a chronic infection of the eye, leading to red, rough and thickened membranes covering the inside of the eyelid and to opacity of the cornea. Scarring of the eyelid may cause an inward deviation of the eyelashes (entropion and trichiasis), which scratch over the cornea and cause ulceration, leading to scarring and visual loss. The infection is caused by Chlamydia Trachomatis.

The infection used to be widely spread in India. It is related with crowding of people, availability of safe water for household use, general hygiene and a dry and dusty environment. Due to improved hygiene, increased availability of safe water and availability of antibiotic eye ointments throughout India, Trachoma has drastically reduced to some small pockets only.

Intervention programmes are based on mass application of local antibiotics, especially to the young children, the adequate supply of safe water and improvement of hygiene. Entropion and trichiasis need surgical correction to prevent any or any further damage of the cornea.

Eye Injuries

In India, eye injuries are a major cause of, usually uni-ocular, blindness. Most injuries occur in agriculture, small scale industries, in or around home, from automobile accidents and from potentially dangerous toys, sticks, fireworks or missiles.

The main intervention is prevention. This can be done through education on eye safety in schools and at work. measures to increase occupational safety at work have to be implemented.

EPIDEMIOLOGY OF BLINDNESS IN INDIA

Effective control of blindness in our country will need an in depth understanding of its distribution and determinants.

Prevalence rate for blindness in India is 1.49 percent with variations from state to state. Exact figures for the incidence of blindness, are not available. However as per ICMR survey, it is estimated that about 2.2 million persons turn economically blind (visual acuity < 6/60) every year. The number of cataract operations performed every year in India is about 1.5 million, which is far less than the number of new cases added every year. As a result the incidence of blindness cases in our country, overtakes the reduction of blindness, through cataract surgery, there by increasing the backlog of blind persons. Another factor responsible for the increase in backlog is the increase in life expectancy, resulting in increase of the aging population, which contributes maximum to blindness.

The prevalence of blindness is high in the states of Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh. In fact these states contribute to about two third cases in the country.

Blindness is a common problem in the elderly population of our community. This adds to their otherwise ill health and disability.

Females have a higher prevalence of blindness compared to males, as per the available information. This may be due to lack of attention and accessibility to the services in females. This group needs special attention for service delivery.

Poor suffer more than affluent. Factors contributing to this may be low nutrition, long working hours outside home and less access to the health services.

Rural areas have a higher prevalence of blindness than urban areas. This may be related to better health consciousness, higher literacy rates, ability to pay and concentration of specialised health care in urban areas.

The cataract backlog is estimated to be - more in rural than in urban areas,more in females than in males and more in laborers and urban slum dwellers than in other social groups. Therefore majority of the blindness control efforts need to be directed towards these groups.

With this magnitude and nature of blindness problem in the country, the National Programme for Control of blindness, has envisaged to target its main attention towards the blind persons in the rural, tribal and slum areas.

PROGRAMME GOALS

- *To reduce the prevalence of blindness to less than 3 per 1000 by the year 2000.*
- *To establish an infrastructure and efficiency levels in the programme to be able to cater to new cases of blindness each year to prevent future backlog*

PROGRAMME OBJECTIVES

- *Remove the backlog of cataract blindness.*
- *Expand the coverage of cataract surgery to treat incident cases of cataract.*
- *Augment the productivity of the programme by optimising the use of manpower and infrastructure.*
- *Make provision of eye care into a felt need of the population by concerted IEC campaign.*
- *Develop positive partnership amongst Government, Voluntary and Private sectors for delivery of eye care.*

PROGRAMME COMPONENTS

National Programme for Control of Blindness has four major components:

1.Cataract Surgery

The aim will be to cover all persons with blinding cataract. In situations where the resources are unable to meet the total needs, preference will be given to the following categories:

- *Bilateral blindness*
- *Younger blind persons*
- *Incident cases - people who recently became blind due to cataract and are likely to take up their activities again.*

2. Refractive Errors

The aim will be to screen the following population and arrange for spectacles for the needy ones:

- *School going children*
- *Other children*
- *Special occupational groups requiring good vision for work, e.g. weavers.*

3. Information Education and Communication

The aim is to:

- *To disseminate information about eye care and services through mass communication*
- *Prevent injuries by educating people, specially children*
- *Provide treatment facilities at the block level for minor injuries.*

4. Rehabilitation of the incurably blind persons:

This will include:

- *Mobility training to the blind*
- *Economic rehabilitation of the young blind people*
- *Education of the blind children in regular schools*
- *Community education about the specific needs of the blind persons.*

PROGRAMME STRATEGY

With a view to tackle the ever growing problem of cataract backlog and to be able to provide services to the new cases, National Programme for Control of Blindness, has planned to strengthen the eye care services by providing additional inputs and improving the efficiency at different levels. It has identified four major thrust areas.

1. STRENGTHENING SERVICE DELIVERY

District blindness control societies

It has been decided to decentralise and delegate the programme implementation to the newly formed District Blindness Control Societies (DBCS), by giving them full financial and administrative autonomy, as provided in the Societies Registration Act, 1860.

This society will function under the chairman ship of the District collector and will coordinate all the blindness control activities in the District.The basic purpose of having this society, is to have a body exclusively committed to blindness control in the district. This society will be responsible for planning, implementing, and monitoring all the blindness control activities in the district, under the overall guidance of State/Central organisation for NPCB. Programme management capacities in the district will be strengthened by providing a new position of District Programme Manager (DPM - NPCB) in this society.

Comprehensive eye care

Efforts will be made to provide the blind and visually impaired population with total eye care by integrating the curative, preventive and rehabilitative activities. Coverage will be extended to tribal and remote rural populations. NGOs and Private sector will be involved to improve coverage.

To provide comprehensive eye care following specific components have been incorporated in the programme.

School Eye Screening

This programme has been taken up for correction of refractive errors in school children. Under this project the school teachers are given training to screen the school children, the selected children with refractive errors are referred to the PMOA for refraction and the children are provided with glasses. All these activities are organised and coordinated by the DBCS.

Community based rehabilitation of the incurably blind

For the incurably blind persons projects are being run by the National Association for Blind (NAB), in some blocks in certain districts of the country. The concept is to rehabilitate the incurably blind in their own community by training them in mobility, braille , in local schools if the person is young and finally helping them to settle in locally available vocation. These activities in the villages are carried out by specially trained field staff .

Quality eye care - Gradually emphasis will be shifted from 'removing the backlog' to 'tackling the incidence' of blindness and low vision. Focus on the 'sight restoration to the blind people' in place of 'number of cataract operations performed'. This will require adoption of new indicators for monitoring.

2. DEVELOPMENT OF MANPOWER

The programme intends to strengthen the training institutions to develop technical and managerial capacity of the eye care staff at different levels.
Different categories of manpower including ophthalmic surgeons, programme managers and support staff, will be given job related training to ensure their appropriate utilization and involvement in the control of blindness.

3. PROMOTION OF OUTREACH ACTIVITIES AND PUBLIC AWARENESS

The programme will provide inputs to generate demand for surgery through outreach camps and awareness campaigns. The focus of attention will be the hard to reach groups. The approaches will be, the use of satisfied customers, school children and teachers, facilitation of access to services and a well planned IEC campaign.

4. DEVELOPMENT OF INSTITUTIONS

Efforts will be made to improve institutional capabilities for better eye care. Mechanism will be developed for appropriate collaboration between the Government, private and voluntary sectors. Monitoring and feedback mechanisms are intended to be introduced to facilitate programme planning modification of approaches and implementation. The institutional capacities will be strengthened for human resource development.

EXERCISE - I A

As you have gone through the Goals, Components, objectives and strategies of the National Programme for Control of Blindness and you have also understood the epidemiology and magnitude of blindness in our country, list 10 specific activities/sub-activities, through which, you in your own PHC, can contribute to the control of blindness.

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EXERCISE - I B

Presuming that the causes of blindness are the same in your PHC/CHC area, as in the rest of the country, work out the number of blind due to different causes, in the appropriate column. Also suggest, possible locally relevant approaches or actions, for solving the problem.

Name of PHC/CHC_____ **Population**_____

Causes of blind-ness	National level percentage	Number in your PHC/CHC	Possible Approaches for solutions

Space for calculations:

PART - II

LET US REVIEW

YOUR JOB RESPONSIBILITIES AND YOUR ROLE IN THE NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS

LEARNING OBJECTIVES

Part two of this module has been designed to create awareness about the expectations of NPCB from you. As a medical officer in charge, of the nearest and the first reporting, health centre for the people, this module will enable you to identify areas where you can effectively contribute towards the control of blindness in the country.

As a nodal officer for NPCB implementation in PHC/CHC

As a medical officer in-charge, of a Primary Health Center or a Community Health Centre, you have many duties to perform. Besides clinical and administrative work , you will work as the nodal officer, for implementation of various National Health Programmes, in your PHC area. Valuing your key position and role, in the delivery of health care services, the National Programme for Control of Blindness, expects your involvement, as the nodal officer for the implementation of NPCB in your area.

It is intended to provide preventive, promotive and curative eye care to people in your area, through your PHC/CHC. Specific tasks, covering different components and services, under the programme, assigned to you as your responsibility are described below.

- **Cataract Treatment**

  Case finding through paramedical staff and maintenance of "Blind person Registry", village wise.

  Organise cataract surgical camps, as a camp officer.

  Organise follow up of the operated cases, through field staff.

- **Refractive errors**

  Supervise and facilitate activities of the PMOAs in the School Eye Screening. Ensure that regular and accurate refraction services are provided.

- **Information Education and Communication.**

  Incorporate the components of health eduction for eye care in similar campaigns for other programmes or organise separate campaign, as required.

- **Clinical**

  Diagnose and treat common ocular diseases and refer complicated cases to the eye specialists.

- **Manpower development**

  Collaborate with the District Training Team in the training of paramedical staff and manpower from other Govt.and Non Govt.sectors, for cataract case finding and eye health education.

PRIORITIES FOR ACTION

On reviewing the above job responsibilities assigned to you, following high priority areas emerge clearly for your continuous attention and action. These are:

- *Role in ensuring Cataract surgery to the cataract blind in your area, by organising eye camps, when adequate number of cases have been identified and registered.*
- *Role as a camp officer.*
- *Diagnose and treat common eye diseases and referring complicated cases to the ophthalmic surgeons.*

First two of these activities assigned to you are elaborated below for your appropriate contribution.

Role in ensuring Cataract surgery to the cataract blind.

Ensuring cataract treatment to the cataract blind, will require attention to cataract case finding, Surgery and follow up. For this activity, in your area, you will need following actions

1. *Identify manpower, in Government as well as Non-Government sectors, which can be effectively used for cataract case finding.*

2. *Collaborate in the training of the identified manpower, as per plans prepared by DBCS and District training team, by using the training package and materials, prepared for this purpose. If a PMOA is available, he may also be required to assist in this activity.*

3. *Assign the trained manpower the task to prepare a list of blind (cataract blind separately marked), with addresses, in their respective areas, during home visits.*

4. *Prepare a register of these blind village wise, for subsequent surgery in a camp. This register should be updated from time to time.*

5. *In this register the date and outcome of surgery are also recorded. A follow up record should also be maintained.*

Role as a Camp officer

After a camp has been decided in your area and sanction of the competent authorities obtained, you will be required to work as a camp officer in collaboration with the District Programme Manager of NPCB.

As a camp officer you will be responsible for all local arrangements. For this, proper attention to the following aspects, will ensure a successful outcome of the camp and establish a sustainable credibility for you, with the consumers. The activities required for organising a camp can be grouped as activities before, during and after the camp.

▪ BEFORE THE CAMP

1. Preparations for the eye camp

For better output you should ensure that all areas under your PHC are well covered by organising eye camps. It will be useful to mobilise the local community, voluntary, private and other agencies to collaborate with you in this activity through your DBCS. Camps can also be sponsored by the NGOs.

2. Camp site

Preferably a camp should be held in a PHC/CHC building, utilising the OT and wards. If this is not possible and the camp is required to be held in field or far flung areas, an appropriate school building or Dharmshala, with few pucca rooms for wards and operation theater, facilities for adequate water, electricity and toilets, may be selected. If no permanent arrangements are available some temporary arrangements can be made. The site should be clean and sprayed with insecticides.

Appropriate site should be identified and marked for reception/registration, OPD, dispensing of drugs and stores, patients kitchen etc.

3. Accommodation and food for patients

Separate wards for male and female patients should be identified. There should be no congestion. Appropriate clean beds should be arranged and numbered. Each ward should be kept under the charge of one worker. Appropriate arrangements for patients food is also essential.

4. Operation Theater

A proper room should be identified for Operation Theater, in consultation with the surgeon. The PMOA should be assigned the duty of making necessary arrangements to set up the OT, to ensure appropriate laying of operation tables for easy movements of the staff and patients. Adequate arrangements should be made for sterilisation of equipments,fumigation of OT and hand washing etc. Adequate light and electricity has to be ensured. A standby generator may be necessary.

5. Emergency support

Arrangements for common emergencies should be available at the camp site. Life saving drugs and equipments should be provided.
Additional staff in case of some members of the earlier identified staff does not report for duty, should be informed in advance, so that they can be called if required.

6. Mobility and transport

Appropriate arrangements for any expected mobility for the service providers or consumers has to be made.

7. Arrangements for the staff

Necessary arrangements for the stay, rest and food etc., for the staff should be made as per plans and requirements.

8. Duties and responsibilities of staff

Well before the camp, a meeting of the staff should be held and technical and other staff requirements be worked out depending on the expected load and duration of the camp. If need be the staff may have to be mobilised from nearby institutions or voluntary and social organisations. A detailed deployment cum duty schedule of the staff should be prepared and communicated to all concerned.

▪ DURING THE CAMP

1. General physical check up of the patients for surgery

You can assign one or more of your Medical Officers to take Blood Pressure and perform general physical examination of the patients selected for surgery. The necessary laboratory investigations may also be assigned to appropriate staff and properly recorded.

2. Ensuring all arrangements

As a camp officer you have to ensure that all the arrangements remain functional and activities are carried out as per plans. You may like to personally monitor and supervise various sub activities and guide your staff for any on the spot improvements.

▪ AFTER THE CAMP

1. Discharge the patients

After the camp is over the patients are discharged. You will be required to give very clear and simple instructions to the patients about the DOs and DONTs, both verbally as well as in writing.

2. Subsequent follow up

A follow up for development of any complications will provide you an opportunity to know the qualitative outcome of the efforts you made, any modifications for future and will help you to build up people's confidence in the health care services, provided by you. The follow up may be done by your field staff during their routine field tours. Cases needing specialist care should be referred to them.

EXERCISE II.

Prepare a check list, mentioning at least 10 points in chronological order, which will help you to organise a successful eye surgery camp in your area.

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ABBREVIATIONS

DBCS District Blindness Control Society

DPM District Programme Manager

IEC Information Education and Communication

NGO Non Government Organisations

NPCB National Programme for Control Of Blindness

PHC Primary Health Centre

PMOA Paramedical ophthalmic assistant

WHO World Health Organisation

ICMR Indian Council for Medical Research

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